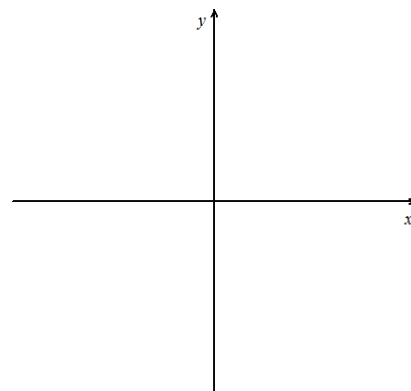
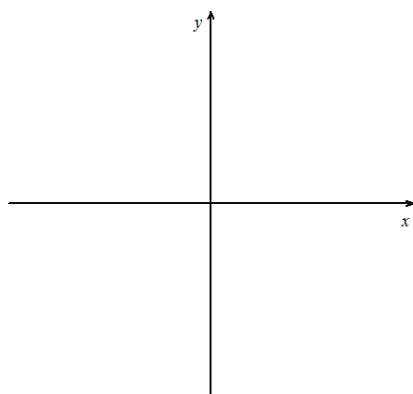


Curve Sketching and Function Analysis Homework Name \_\_\_\_\_

Analyze and sketch a graph of the function. Label any intercepts, relative extrema, asymptotes, and points of inflection.

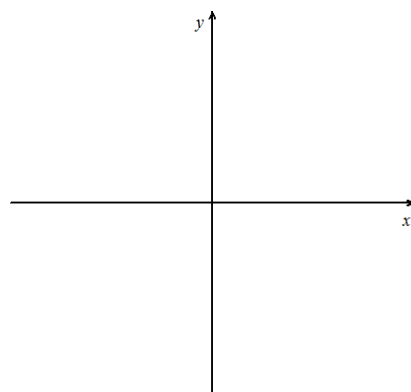
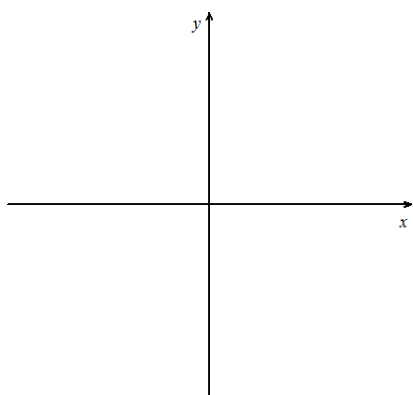
1.  $y = x - 4\sqrt{x}$

2.  $y = \frac{x-3}{x}$



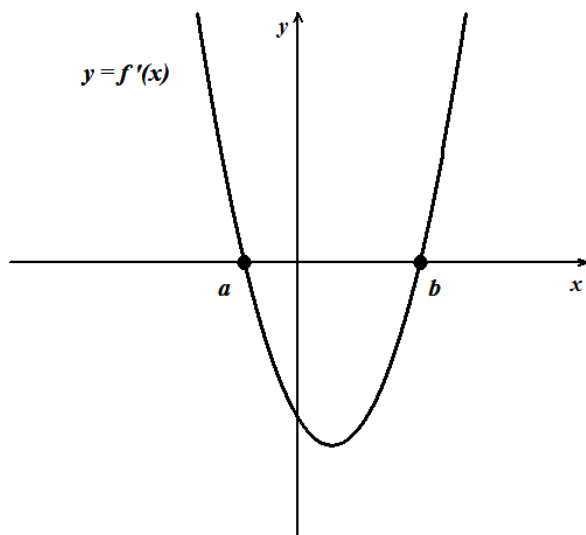
3.  $y = 2 \cos x - x ; [0, 2\pi]$

4.  $y = x - 2 \ln x$

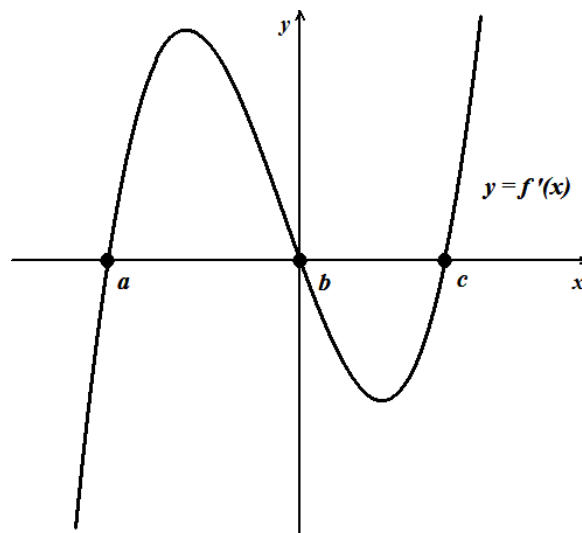


Use the graph of the  $f'$  to sketch the graph of  $f$  and the graph of  $f''$ .

5.



6.



Sketch the graph of the function,  $f$ , given the following information.

7.

- continuous for all real numbers
- $f'(x) < 0$  on  $(-\infty, -3)$  and  $(0, 3)$
- $f'(x) > 0$  on  $(-3, 0)$  and  $(3, \infty)$
- $f''(x) > 0$  on  $(-\infty, 0)$  and  $(0, 6)$
- $f''(x) < 0$  on  $(6, \infty)$
- $f'(0)$  does not exist

8.

- continuous for all real numbers
- $f'(2)$  does not exist
- $\lim_{x \rightarrow -\infty} f(x) = 2$
- $f'(x) > 0$  on  $(-\infty, -1)$  and  $(2, 5)$
- $f'(x) < 0$  on  $(-1, 2)$  and  $(5, \infty)$
- $f''(x) > 0$  on  $(-\infty, -3)$
- $f''(x) < 0$  on  $(-3, 2)$  and  $(2, \infty)$

